

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE AS FOLLOWS:

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1. An ornament/design or sign, comprising a solid matrix of material providing a body having a predetermined shape, said body having at least one light scattering translucent surface, groove and/, ridge or characteristic formed therein, said surface, grooves, ridges or characteristics providing a design, shape, image, letter or character all formed by forming and preferably etching the surface, grooves, ridges or characteristics into the matrix of the body of the ornament/design or sign, said body having disposed therein an opening having contained therein in use at least one light source, which may be glued or molded in place within the opening, or alternatively loosely fit within the opening, said at least one light source including electrical leads extending to an electrical conductor or alternatively to a printed circuit board for the powering thereof; the material being transparent and of any suitable colour for the holiday season such as amber, red, green, blue, clear, purple, yellow, orange or any shades or combinations thereof; said light source being positioned so as to light the ornament, said light exiting the light source being dispersed by said light scattering translucent at least one etched surface, groove, ridge or characteristic so as to create a dispersion of the light which would remain undispersed had the etched surface, grooves, ridges or characteristics not been provided.
2. The ornament/design or sign of claim 1 wherein said ornament is a Christmas ornament.
3. The ornament/design or sign of claim 2 further comprising a candle, an image of Santa Claus, a crucifix, a heart or the like,

FOOTNOTES

4. The ornament/design or sign of claim 1 wherein said light source is disposed proximate at least one side of the ornament/design or sign.
5. The ornament/design or sign of claim 1 wherein said light source is at least one light emitting diode.
6. The ornament/design or sign of claim 1 being manufactured from polymethylmethacrylate, acrylic, resins, Lexan® or the like.
7. The ornament/design or sign of claim 1 wherein the etching of the body of the ornament/design or sign further comprises a second etched surface, groove, ridge or characteristic within the perimeter of the first etched surface groove, ridge or characteristic.
8. A display sign comprising a body of solid material preferably said body being transparent and having sides, ends, and a top and a bottom, said top or bottom having a translucent light scattering surface, ridge and/or groove formed or etched therein which contains the outline of a symbol, figure, a message, or an international symbol, said translucent surface, ridge and/or groove being formed or etched so as to provide light scattering within said body, at least one of said ends or sides including light emitting diodes contained therein or disposed adjacent thereto to emit light in the direction of the translucent surface, grooves and/or, ridges or characteristics so as to disperse said light substantially uniformly from the top or bottom of the display panel and provide the observer with the displayed impression or message created by the

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dispersion of the light from the formed or translucent surface, grooves , ridges or characteristics which would remain undispersed had the translucent surface, grooves , ridges or characteristics not been provided.

9. The display sign of claim 8 wherein said solid material is manufactured from polymethylmethacrylate, acrylic, resins, Lexan® or the like.

10. The display sign of claim 8 further comprising a pair of supporting rails in a housing, wherein said a sign is sized so as to fit between the pair of supporting rails in the housing.

11. The display sign of claim 10 wherein at least one rail carries light emitting diodes, said rails being separated and sized so as to receive the ends or sides of said display-sign in a channel in each rail.

12. A holiday season ornament comprising a body having provided therein a translucent etched or otherwise formed light scattering surface, ridge or groove, and also containing secondary light scattering elements, said body being of any desired shape and containing at least one opening for at least one light source which is positioned so as to light the body with the light exiting from the light source and being dispersed by said light scattering means, and by said at least one translucent etched or otherwise formed surface, groove , ridge or characteristic so as to create a dispersion of the light from the body which would remain undispersed had the translucent etched surface, groove, ridge and the light scattering means not been provided.

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(2) forming the ornament/design or sign from said material, in one embodiment cutting the ornament/design or sign from a sheet of predetermined

(3) forming at least one translucent preferably etched light scattering surface, groove, ridge or characteristic within the perimeter of the ornament/design/sign so as to defuse, refract, and otherwise disperse any incident light falling on or near said etched surface, groove, ridge or characteristic; in one embodiment etching the material adjacent the perimeter of the shape of the ornament proximate at least one location and preferably at a second location, or for example in the case of a leaf providing the veining outline of a leaf in etched form, or as in the case of Santa Claus providing the facial characteristics with etching or alternatively with fruit providing the etching at the most optimal locations which best simulates the fruit;

(5) providing conductors to engage the light source for providing power to the sign/ornament/design;

wherein the light incident upon the translucent light scattering preferably etched surfaces, grooves , ridges or characteristics within the sign, design or ornament will scatter, disperse, refract or reflect enhancing the effective lighting and eye appeal of the sign/design/ornament to a much greater extent than any substantially clear sign design or ornament.

18. The method of claim 17 wherein the sign formed from practicing the method is a display sign containing a message such as No Smoking, or Fine Dining Here, or Emergency or any such message or advertising that might be displayed to the public so as to obviate the need for neon signs, house numbering, flares, letters or the like.

19. The method of claim 18 wherein the sign is substantially rectangular in shape and is be contained between two display rails and which contain a LED array disposed within or adjacent to the edge of the display sign so as to provide incident light on the etched surfaces from the edge of the sign.

20. The method of claim 17 wherein ornaments, for example for Christmas, Halloween or Valentine's Day in many suitable shapes such as in a shape of hearts, Christmas trees, pine cones, pineapples or the like of many different and combinations of colours and variations thereto, are made and adapted to be connected with a power supply in a modular fashion for example via plug connectors or the like which allows for simple changing of each ornament, for example the Christmas tree ornaments and their positions in an array.

21. An ornament comprising a matrix of clear transparent material such as methylmethacrylate, Lexan®, acrylic or the like, said ornament when suitably oriented having a top and bottom and being of a predetermined shape, said top and bottom of said ornament and at least said top being formed into the desired shape of the ornament such as a Christmas tree, a circle, a piece of fruit, a Santa Claus, or the like and having a predetermined perimeter, said predetermined perimeter being disposed proximate an outer edge of said top and said bottom

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having therebetween disposed at least one side, said ornament and preferably said at least one side, having disposed therein at least one opening, said at least one opening for having installed therein a light source such as a light-emitting diode or the like, said ornament having an etched or otherwise formed light scattering surface, alphanumeric character(s), design(s), or pleasing shape(s) therein, wherein said etching further comprises at least one compatibly shaped etched design formed by providing in one embodiment at least one light scattering groove, ridge or characteristic portion, or at least one light scattering etched surface, extending in predetermined directions to provide said etched design, wherein the material adjacent the at least one surface, groove or channel or the like is substantially translucent or non-transparent so as to substantially disperse any incident light thereon from the light source in use, the light striking said at least one etched surface, groove, design or the like causing light to disperse and/or scatter from said design to a much greater extent than light passing through a matrix of transparent material, said dispersion or scattering of the light thereby creating a pleasing and more effective ornament.

22. The ornament of claim 21 wherein said ornament is any colour such as amber, red, blue, green, turquoise, orange, purple, or the like, or combinations thereof, and the resultant etching is an off shade of said ornament colour.

23. The ornament of claim 21 further comprising include electrical connections which are connected to a conducting lead such as a pair of wires wherein said pairs of wires extend to like ornaments in series or parallel (preferably using a modular plug like format) thereby creating a string of

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ornaments suitable for decorating a Christmas tree or the exterior or interior of a home.

24. The ornament of claim 23 linked together with dissimilar and complementary ornaments all linked together in a string to provide a pleasing set of lights.

25. The ornament of claim 23 wherein the ornaments are identical but of alternative colours or colour combinations.

26. The ornament of claim 23 wherein said string of ornaments contain more than one light source of different colours which may be alternated for a different effect.

27. A ornament for the holiday seasons comprising a matrix of clear transparent, wherein said ornament has at least one light scattering translucent light scattering surface, ridge, or channel formed or preferably etched therein or about the perimeter thereof, said ornament including at least one opening containing a lighting source in use (preferably at lease one LED), wherein when lit said lighting source will direct incident light within the ornament upon the light scattering translucent surface, channel , ridge or characteristic so as to create a more uniform dispersion of light from the ornament as opposed to a point source of light.

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29. A sign comprising a single sheet of transparent material, said sign having formed and preferably etched therein at least one light scattering design, symbol and/or a message in any language which may be readily identifiable to an observer, said sign including a transparent matrix of methylmethacrylate, acrylic, resin, Lexan® or the like, or any suitable transparent material of any desired colour or combination of colours which can be etched or alternatively which can have suitable translucent lettering, or design(s), or the like formed therein by, for example, by vacuum forming or alternative molding techniques, said design(s) or message being preferably formed proximate the top of said sign, said edges of said sign having disposed therewith proximate at least one edge thereof openings for at least one light source preferably disposed in or fixed therein and, in one embodiment said openings having contained therein light sources such as light-emitting diodes when the sign is formed, and which are powered by a source of electrical supply through a conductor, wherein when the light sources and the preferred light-emitting diodes are powered, incident light strikes said light scattering translucent surface or etching of said message and/or design and highlights the lettering or design to a much greater extent than light emitting from the transparent sections of the display sign.

~~30. The sign of claim 29 wherein the light sources and preferred light-emitting diodes are not contained within said edge but are disposed within a module including a printed circuit board and the necessary circuitry for~~

~~powering the light sources, the tips of said light sources being inserted within the openings of said sign or alternatively disposed adjacent thereto in use.~~

31. A sign or ornament comprising an etched or otherwise formed translucent light scattering design, lettering, or shape within a matrix contained in the body of a sign or ornament, said sign or ornament having included therewith at least one opening, said opening having contained therewith at least one light source and preferably a light-emitting diode, wherein light emerging from the light source and preferred light-emitting diode incident upon the light scattering translucent design lettering or shape of the sign or the ornament will be enhanced to a much greater extent than any light emanating from the transparent portions of the sign/ornament.

32. The sign or ornament of claim 31 further comprising a string of lights.

33. The sign or ornament of claim 31 further comprising a necklace.

34. The sign or ornament of claim 31 further comprising a display sign for a store window including any alphanumeric character in any language or a internationally recognized symbol or design.

35. The sign or ornament of claim 31 further comprising an emergency help sign or road marker which may also include any alphanumeric character in any language or a internationally recognized symbol or design.

36. The sign or ornament of claim 31 further comprising a company logo or a clip on personal safety light.

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37. The sign or ornament of claim 31 further comprising a game, for example a checker or chess board that has sections or playing pieces that illuminate.

38. The sign or ornament of claim 31 further comprising toys of all kinds which may take any possible shape or size in 2 or 3 dimensions.

39. The design/sign/ornament of claim 1, 8, 12, 21, 27, 29, or 31 further comprising LED's of at least one or more colours which in co-operation with a switching device changes the colour of ornament, message or design over time.

40. The sign of claim 1, 8, or 29 further comprising a modular display sign housing, including an opposed rail assembly having inserted therein a preferably substantially concave reflective panel adjacent said sign in order to reflect light and enable use of less LED's while achieving a very satisfactory back light depending on the design/ornament/sign application.

41. The sign of claim 40 further comprising reflective panel which may be concave, convex, or flat of either a smooth glass like material or corrugated material all of which may be slid into the preferred modular housing adjacent the sign or alternatively may be glued, clipped or otherwise fastened.

42. The ornament of claim 1, 12, 21, 27 or 31 wherein a mirror like coating or reflective veneer like material is placed thereon during or after manufacturing having various textures for example ribbed, corrugated or any texture that reflects/disperses light satisfactorily.

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43. The design/sign/ornament of claim 1, 8, 12, 21, 27, 29, or 31 further comprising a design selected from the group of designs including patio stones with built in lighting, lighted steps or walkways, posts and stairways, lighted railings and banisters, welcome signs, lighted decorative water fountains for indoors and outdoors, lighted waterfalls, lighted birdbaths, swimming pool accent lighting, lighted driveways and curbs, lighted decorative rock lighting, accent lighting for high-rise buildings, lighted address numbers, lighted signs for advertising and direction, decorative lighting for building exteriors, lighted perimeter flashing trim elements, accent lighting for doors, windows and frames, lighted baseboards and nightlights, lighted railings, stairs, picture frames, table tops, bar edges, counter tops, door handles and locks, lighted floor tiles, lighted bathroom ceramics, lighted toilet seat, accent lighting for glass partitions with sandblasted images, lighted sports logos and mascots on novelty items and collector pieces, stained glass backlighting (for lighting module with actual stained glass), lighted emergency signs to replace flares for road closures and emergency situations, lighted name plates and trim and license plates for cars and trucks, safety lighting for cyclist, lighted street signs, lighted street names, lighted warning signs, or trouble light (various sizes).

44. A method of manufacturing ornaments/designs or signs from a matrix of clear material such as acrylic, methylmethacrylate, Lexan® or the like, said method comprising:

(1) identifying a suitable material which may be molded, and when molded having at least one translucent light scattering surface, groove, , ridge or characteristic;

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(2) placing at least one light source in a mold for an ornament/design or sign, said mold structured to provide the final shape of the desired product and locating said light source at positions wherein a light source is desired for the desired product;

(3) introducing said suitable material into said mold to form the ornament/design or sign; wherein said at least one light source is encapsulated in the suitable material when the desired product is molded at the desired positions wherein a light source is desired;

(4) coincidently molding or subsequently forming at least one translucent preferably etched light scattering surface, groove, ridge or characteristic within the perimeter of the ornament/design/sign so as to defuse, refract, and otherwise disperse any incident light falling on or near said translucent and preferred etched surface, groove, ridge or characteristic;;

(5) preferably providing conductors to engage the at least one light source for providing power to the sign/ornament/design;

wherein the light incident upon the translucent preferably etched light scattering surfaces, grooves, ridges or characteristics within the sign, design or ornament will scatter, disperse, refract or reflect enhancing the effective lighting and eye appeal of the sign/design/ornament to a much greater extent than any substantially clear ornament; wherein the at least one light source is molded, encapsulated and fixed within the desired product.

45. The method of claim 44 wherein said light source further comprises at least one raw diode.

46. The method of claim 44 or 45 further comprising an ornament in a predetermined shape selected from the group of shapes such as a rectangular or a bell shape, a Santa

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~~Claus shape, a cross shape, the shape of a bulb, the shape of a Christmas tree, the shape of fruit, the shape of leaves, the shape of stars, the shape of circles, or the like.~~

47. The method of claim 46 wherein the material is etched adjacent the perimeter of the shape of the ornament proximate at least one location and at a second location.

48. The method of claim 47 wherein the ornament is selected from the group of ornaments as follows , a leaf including the veining outline of a leaf in etched form, a Santa Claus figure providing the facial characteristics with etching, or fruit providing the etching at the most optimal locations which best simulates the fruit.

49. The method of claim 44 wherein the electrical connectors are connected to the light source prior to the molding step.

50. The method of claim 46 wherein several ornaments are molded simultaneously .

51. The method of claim 44 wherein the desired product is a display sign and the at least one light source is an array of raw diodes mounted on a circuit board and inserted into the mold prior to the molding step.

52. A display sign formed from practicing the method of claim 44 containing a message such as No Smoking, or Fine Dining Here, or Emergency or any such message or advertising that might be displayed to the public so as to obviate the need for neon signs, house numbering, flares, letters or the like.

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53. -- ~~The display sign of claim 52 wherein the sign is substantially rectangular in shape and is contained between two display rails which contain the circuit board disposed adjacent to the edge of the display sign when molded.~~

54. The method of claim 44 utilized to manufacture ornaments selected from the group of ornaments including Christmas, Halloween or Valentine's Day.

55. The method of claim 54 wherein said ornaments are of many different combinations of colours.

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